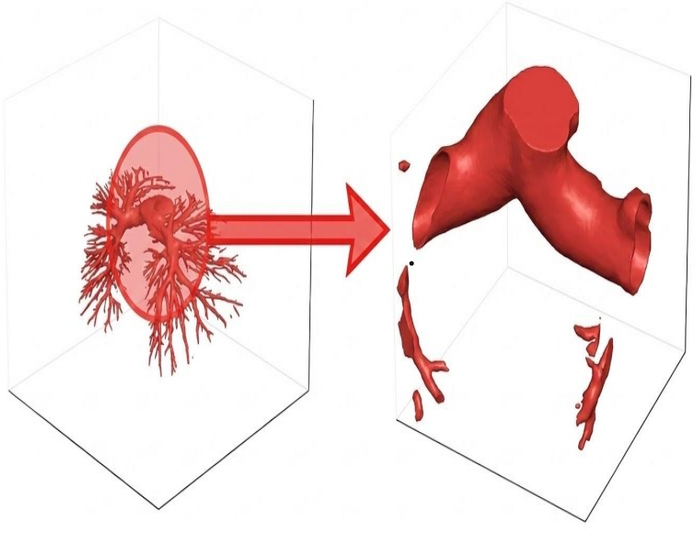
INPUT

Fragmented Volumetric Segmentation

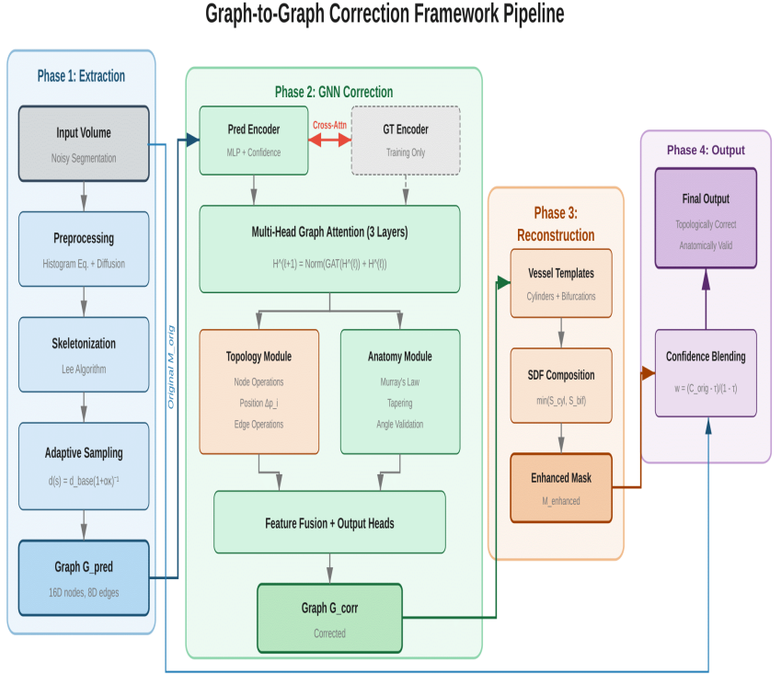


- High Dice, Broken Topology
- 400+ Disconnected Components

Skeletonization & Graph Extraction

METHOD

Graph-to-Graph GNN Framework

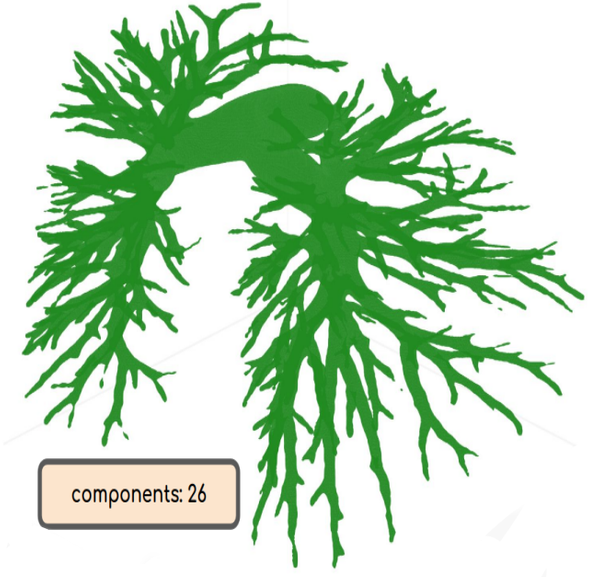


- Dual-Module Correction
- Topology & Murray's Law

SDF Reconstruction

OUTPUT

Topologically & Anatomically Coherent Vessel Tree



- 92% Component Reduction
- Physiologically Valid
- Fast Inference (<41s)